

REMARKS/ARGUMENTS

Claims 1-16 are pending in this application. By this Amendment, Applicant amends Claim 7, 8, 15 and 16.

Claims 7, 8, 15 and 16 were rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite. Applicant has amended Claims 7, 8, 15 and 16 to correct the informalities noted by the Examiner. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 1-4, 8-12 and 16 were rejected under 35 U.S.C. § 102(b) as being anticipated by Kajihara et al. (U.S. 5,559,483). Claims 5, 6, 13 and 14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kajihara et al. Claims 7 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kajihara et al. in view of Oshio (US 2004/0164645). Applicant respectfully traverses the rejections of Claims 1-16.

Claim 1 recites:

A surface acoustic wave device comprising:

first and second double-mode surface acoustic wave resonator filters connected in parallel to each other, each of said first and second double-mode surface acoustic wave resonator filters including a piezoelectric substrate, IDT electrodes and grating reflectors disposed on the piezoelectric substrate; wherein

the first double-mode surface acoustic wave resonator filter has resonance frequencies f_{1L} and f_{1H} , where $f_{1L} < f_{1H}$;

the second double-mode surface acoustic wave resonator filter has resonance frequencies f_{2L} and f_{2H} , where $f_{2L} < f_{2H}$;

$f_{1H} = f_{2L}$; and

an energy transmittance of the reflectors in at least one of the first and the second double-mode surface acoustic wave resonator filters ranges from about 12% to about 28%. (emphasis added)

Claim 9 recites:

A surface acoustic wave device comprising:

first and second double-mode surface acoustic wave resonator filters connected in parallel to each other, each of said first and second double-mode surface acoustic wave resonator filters including a

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piezoelectric substrate, IDT electrodes disposed on the piezoelectric substrate, and grating reflectors on both sides of a region where the IDT electrodes are disposed in the surface acoustic wave propagation direction; wherein

the first double-mode surface acoustic wave resonator filter has resonance frequencies f_{1L} and f_{1H} , where $f_{1L} < f_{1H}$;

the second double-mode surface acoustic wave resonator filter has resonance frequencies f_{2L} and f_{2H} , where $f_{2L} < f_{2H}$;

$f_{1H} = f_{2L}$; and

a Q factor of a resonance mode of one of the first and the second double-mode surface acoustic wave resonator filter is less than a Q factor of a resonance mode of the other double-mode surface acoustic wave resonator filter. (emphasis added)

With the unique combination and arrangement of features recited in Applicant's Claims 1 and 9, including the features of "first and second double-mode surface acoustic wave resonator filters," "an energy transmittance of the reflectors in at least one of the first and the second double-mode surface acoustic wave resonator filters ranges from about 12% to about 28%" and "a Q factor of a resonance mode of one of the first and the second double-mode surface acoustic wave resonator filter is less than a Q factor of a resonance mode of the other double-mode surface acoustic wave resonator filter," Applicant has been able to provide a surface acoustic wave device in which an undesired ripple is efficiently suppressed by controlling the energy transmittance of the reflectors and by decreasing the Q factor of the resonance mode of one of the first and second double-mode surface acoustic wave resonators (see, for example, the second, third and fourth full paragraphs on page 7 of the originally filed specification).

The Examiner alleged that Kajihara et al. teaches all of the features recited in Claims 1 and 9. In particular, in the paragraph bridging pages 2 and 3 of the outstanding Office Action, the Examiner alleged that Kajihara et al. teaches the feature of "an energy transmittance of the reflectors (29, 31, 37, 39) in at least one of the first and the second double-mode surface acoustic wave resonator filters (21, 23) ranges from about 12% to about 28%. Note that as Kajihara et al. show all the claimed

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structural features, the goal noted by the applicants here is regarding as being met by Kajihara et al.” In addition, in the paragraph bridging pages 3 and 4 of the outstanding Office Action, the Examiner alleged that Kajihara et al. teaches the feature of “a Q factor of a resonance mode of one of the first and the second double-mode surface acoustic wave resonator filter[s] (21 or 23) is less than a Q factor of a resonance mode of the other double-mode surface acoustic wave resonator filter (23 or 21). Again note that as Kajihara et al. show all of the structural features, the goal noted by the applicants here is regarded as being met by Kajihara et al.” Applicant respectfully disagrees.

First, the surface acoustic wave resonator filters 21, 23 of Kajihara et al. are specifically disclosed as **triple-mode** surface acoustic wave resonator filters, **NOT double-mode** surface acoustic wave resonator filters as recited in Applicant’s Claims 1 and 9 (see, for example, col. 4, lines 58-68 of Kajihara et al.). In fact, the entire disclosure of Kajihara et al. is directed to **triple-mode** surface acoustic wave resonator filters. Kajihara et al. fails to teach or suggest anything at all about **double-mode** surface acoustic wave resonator filters, or that the resonator filters 21, 23 of Kajihara et al. could or should be used as double-mode surface acoustic wave resonator filters. Thus, Applicant respectfully submits that Kajihara et al. fails to teach or suggest the features of “first and second double-mode surface acoustic wave resonator filters” as recited in Applicant’s Claims 1 and 9.

Second, Kajihara et al. fails to teach or suggest anything at all about an energy transmittance of any of the reflectors 29, 31, 37, 39, and certainly fails to teach or suggest that the energy transmittance of the reflectors 29, 31, 37, 39 could or should be maintained in a desired range. Thus, contrary to the Examiner’s allegations, Kajihara et al. clearly fails to teach or suggest the features of “an energy transmittance of the reflectors in at least one of the first and the second double-mode surface acoustic wave resonator filters ranges from about 12% to about 28%” as recited in Applicant’s Claim 1.

As noted above, contrary to the Examiner’s allegations, Kajihara et al. does not teach or suggest all of the structural features recited in Applicant’s Claim 1. Thus, since Kajihara et al. fails to teach or suggest anything at all about the energy transmittance of

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the reflectors 29, 31, 37, 39, Kajihara et al. cannot be fairly construed as meeting the “goal noted by applicant” as alleged by the Examiner.

In addition, the feature of “an energy transmittance of the reflectors in at least one of the first and the second double-mode surface acoustic wave resonator filters ranges from about 12% to about 28%” as recited in Applicant’s Claim 1 is more than a mere goal of the claimed invention, as alleged by the Examiner. Instead, the energy transmittance of the reflectors is set by providing specific structural features and a specific arrangement of the reflectors. Thus, even assuming *arguendo* that Kajihara et al. taught or suggested all of the structural features, except for the energy transmittance recited in Applicant’s Claim 1, Kajihara et al. could still not be fairly construed as expressly or inherently teaching or suggesting the feature of “an energy transmittance of the reflectors in at least one of the first and the second double-mode surface acoustic wave resonator filters ranges from about 12% to about 28%” as recited in Applicant’s Claim 1.

Third, Kajihara et al. fails to teach or suggest anything at all about a Q factor of the first and second surface acoustic wave resonators 21, 23, and certainly fails to teach or suggest any relationship between the Q factors of the first and second surface acoustic wave resonator filters 21, 23. Thus, contrary to the Examiner’s allegations, Kajihara et al. clearly fails to teach or suggest the feature of “a Q factor of a resonance mode of one of the first and the second double-mode surface acoustic wave resonator filter is less than a Q factor of a resonance mode of the other double-mode surface acoustic wave resonator filter” as recited in Applicant’s Claim 9

As noted above, contrary to the Examiner’s allegations, Kajihara et al. does not teach or suggest all of the structural features recited in Applicant’s Claim 1. Thus, since Kajihara et al. fails to teach or suggest anything at all about the Q factors of the first and second surface acoustic wave resonator filters 21, 23, Kajihara et al. cannot be fairly construed as meeting the “goal noted by applicant” as alleged by the Examiner.

In addition, the feature of “a Q factor of a resonance mode of one of the first and the second double-mode surface acoustic wave resonator filter is less than a Q factor of

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a resonance mode of the other double-mode surface acoustic wave resonator filter” as recited in Applicant’s Claim 9 is more than a mere goal of the claimed invention, as alleged by the Examiner. Instead, the Q factor of the double-mode surface acoustic wave resonator filters is set by providing specific structural features and a specific arrangement of the double-mode surface acoustic wave resonator filters. Thus, even assuming *arguendo* that Kajihara et al. taught or suggested all of the structural features, except for the energy transmittance, recited in Applicant’s Claim 9, Kajihara et al. could still not be fairly construed as expressly or inherently teaching or suggesting the feature of “a Q factor of a resonance mode of one of the first and the second double-mode surface acoustic wave resonator filter is less than a Q factor of a resonance mode of the other double-mode surface acoustic wave resonator filter” as recited in Applicant’s Claim 9.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 1 and 9 under 35 U.S.C. § 102(b) as being anticipated by Kajihara et al.

The Examiner relied upon Oshio to allegedly cure deficiencies of Kajihara et al. However, Oshio clearly fails to teach or suggest the features of “first and second double-mode surface acoustic wave resonator filters,” “an energy transmittance of the reflectors in at least one of the first and the second double-mode surface acoustic wave resonator filters ranges from about 12% to about 28%” and “a Q factor of a resonance mode of one of the first and the second double-mode surface acoustic wave resonator filter is less than a Q factor of a resonance mode of the other double-mode surface acoustic wave resonator filter” as recited in Applicant’s Claims 1 and 9. Thus, Applicants respectfully submit that Oshio fails to cure the deficiencies of Kajihara et al. described above.

Accordingly, Applicant respectfully submits that Kajihara et al. and Oshio, applied alone or in combination, fail to teach or suggest the unique combination and arrangement of elements recited in Applicant’s Claims 1 and 9.

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In view of the foregoing amendments and remarks, Applicant respectfully submits that Claims 1 and 9 are allowable. Claims 2-8 and 10-16 depend upon Claims 1 and 9, and are therefore allowable for at least the reasons that Claims 1 and 9 are allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

To the extent necessary, Applicant petitions the Commissioner for a One-Month Extension of Time, extending to April 6, 2006, the period for response to the Office Action dated December 6, 2005.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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